

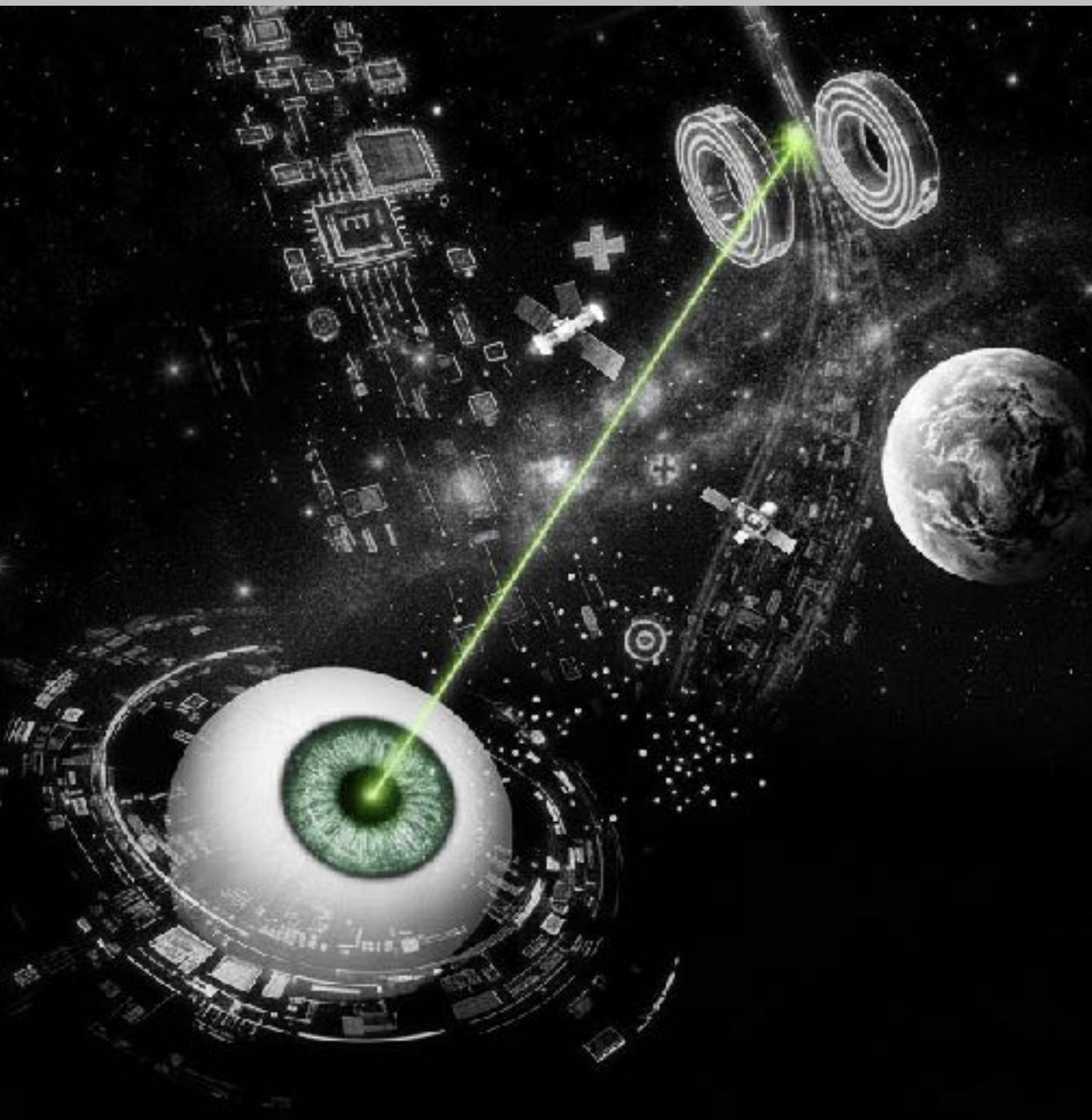
**01**

*Space is the backbone for Earth's digital infrastructure*



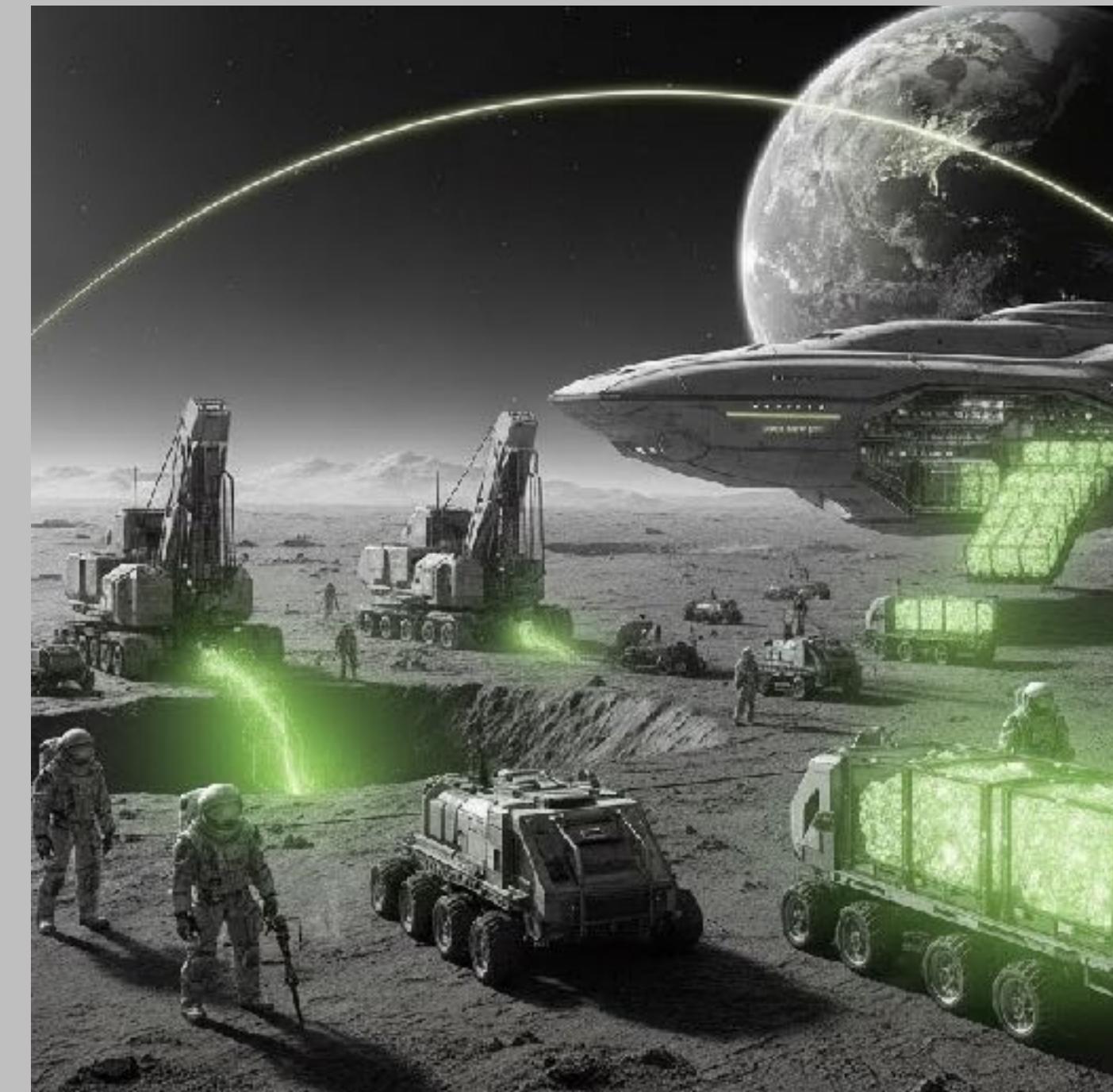
**02**

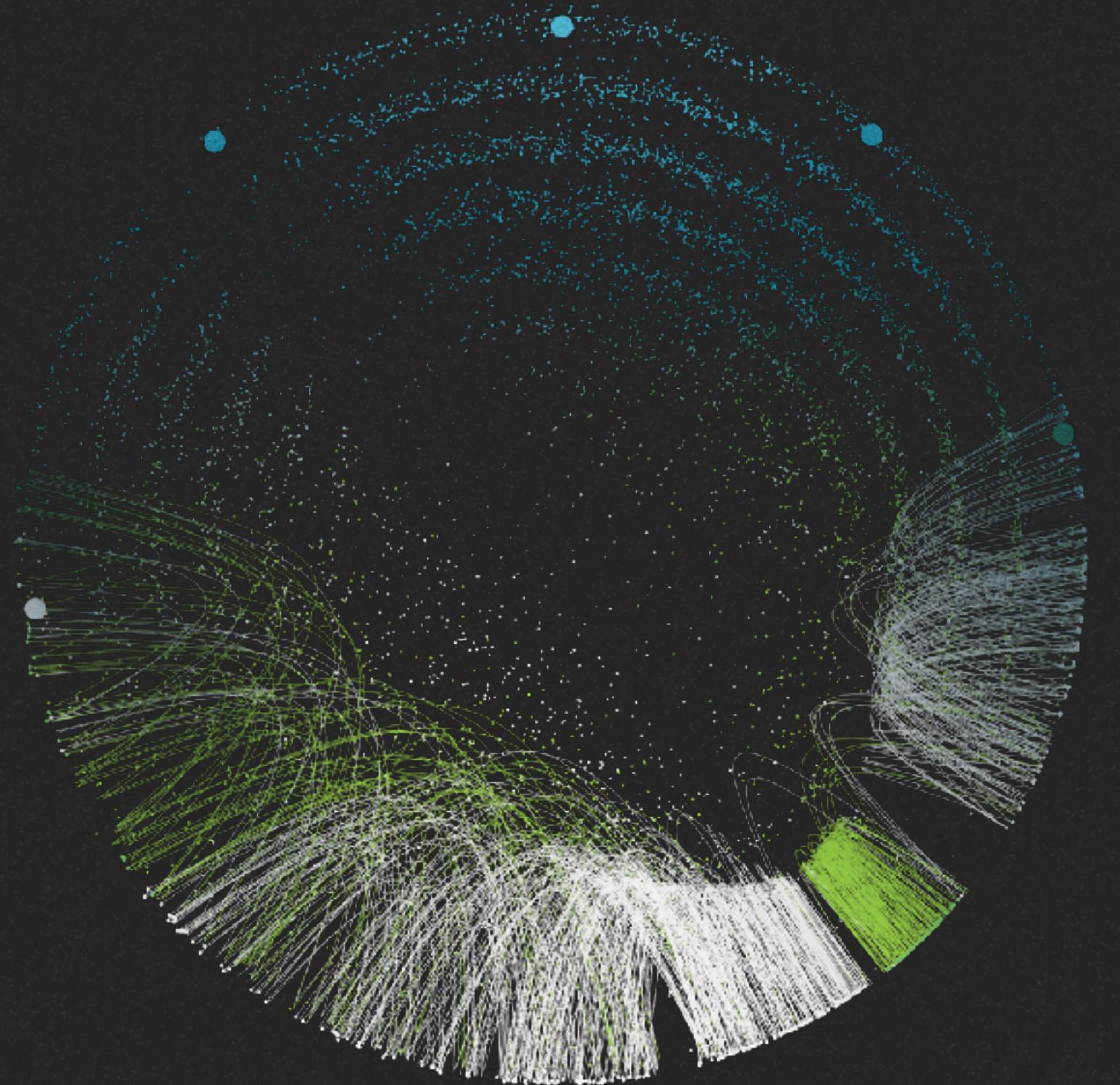
*Space is the boundary for cutting-edge deep technology, demonstrating lots of technology transfers*



**03**

*Space ushers in the next generation of abundance*





- **Historical Outcomes and Growth:**

We project robust overall growth outlook in the space sector and predict that the emerging space market is at a takeoff point.

- **Digital Infrastructure:**

Our current digital infrastructure is increasingly reliant on space-based technologies.

- **Emerging technology:**

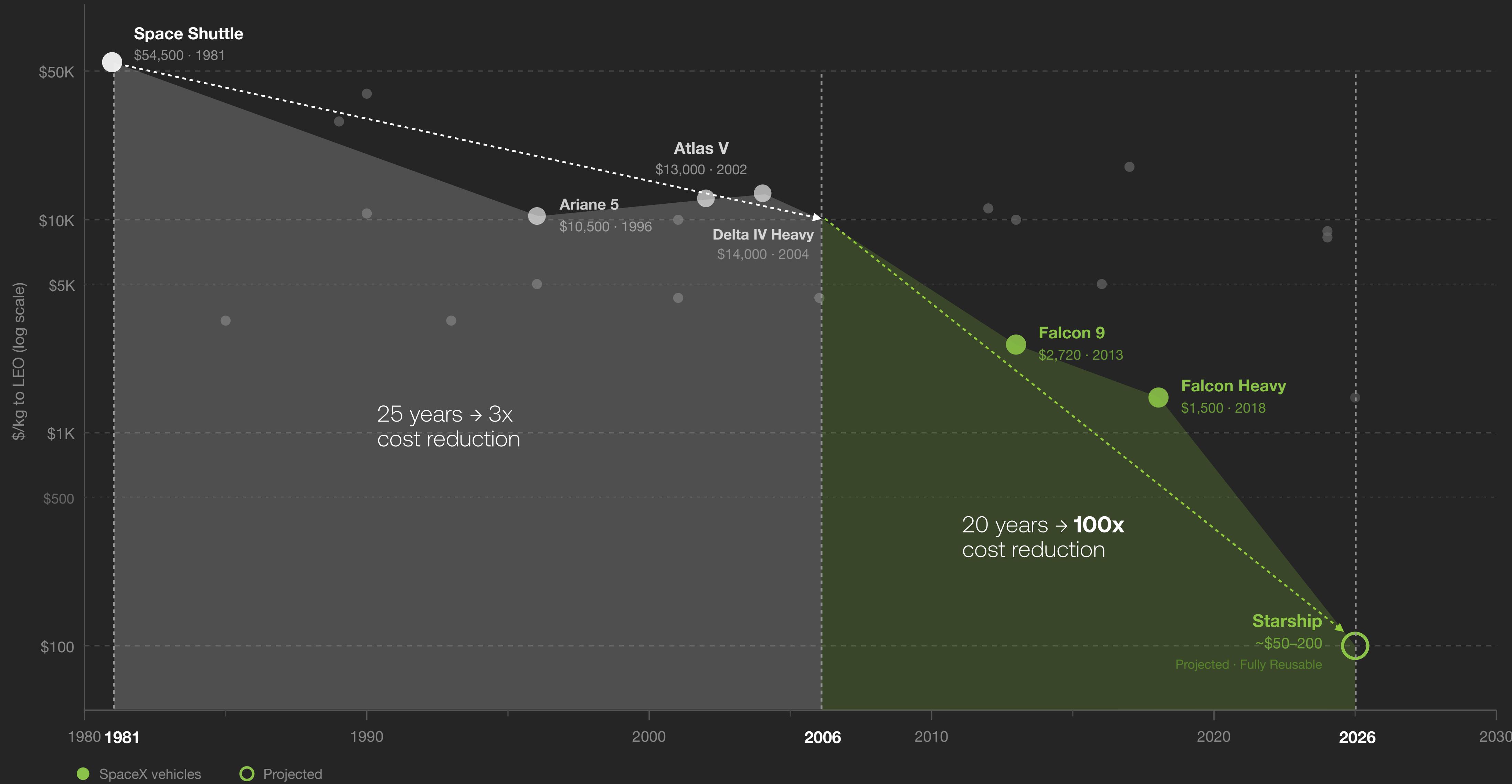
Emerging technology may soon kickoff the next paradigm for business opportunities. Falcon9 is already a decade-old paradigm, with Starship on the horizon.

- **Technology transfer:**

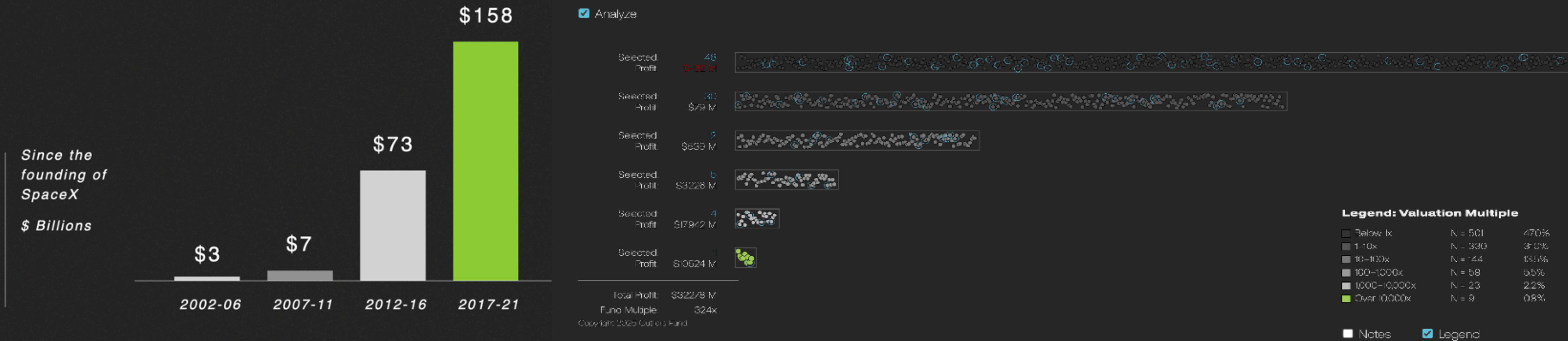
Technologies developed in space have historically been horizontally integrated on Earth-based ventures.

## Market | New Economics of Space Launch

Launch costs have dropped by **300x** in the last 45 years; **100x** in the last 20 years (mostly contributed by **SpaceX**)



## Market | Historical Outcomes and Growth Forecast



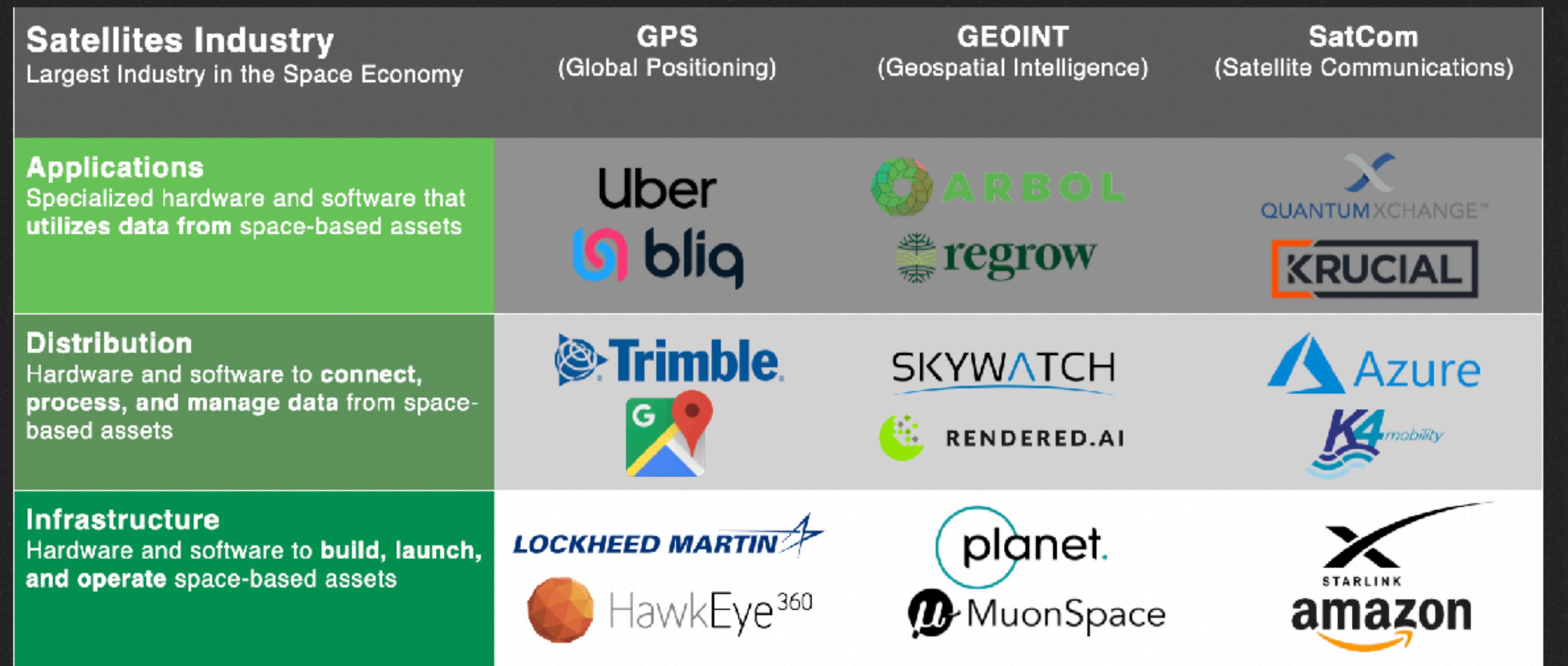
Private Market Equity Investment in the Space Economy (source: Space Capital)

Our analysis covering 1,552 U.S.-based space companies founded between 2000 to 2025 reveals:

- Of the 53% of companies that survived, 9 companies achieved >10,000x valuation growth multiples, 23 between 1,000-10,000x, and 59 between 100-1,000x.
- More critically, we found 50 major liquidation events (IPO/M&A), generating material DPI. 50 is a conservative floor given undisclosed private M&As. A theoretical \$1M investment in each company's first round would yield 40x returns (16% IRR) over a 25-year period.

We project 1,500-3,000 new U.S. space companies by 2030, though annual formation rates will moderate from 95% growth (2026) to 75% (2030) as the market consolidates around proven business models and capital concentrates in winners.

## Market | New Era Digital Infrastructure



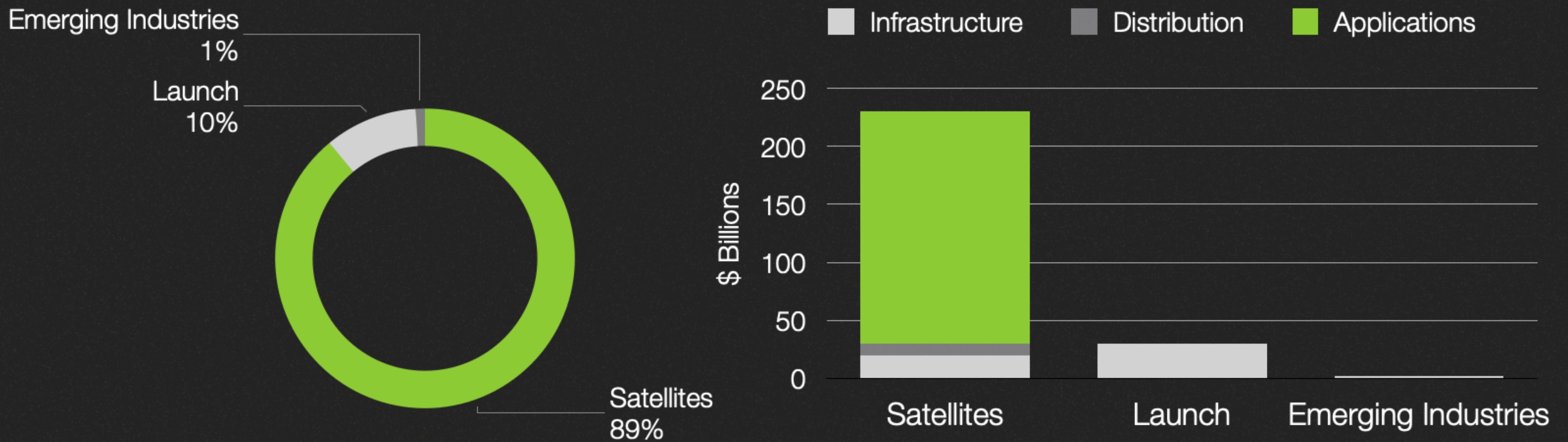
Source: Space Capital

Between 2012 and 2021, private capital fueled innovation across three satellite technology stacks: GPS, GEOINT, and SatCom. Each stack comprises three layers: Infrastructure, Distribution, and Applications.

For example:

- Infrastructure: Lockheed Martin launches GPS satellites that generate positioning and timing data.
- Distribution: Companies like Trimble and Garmin make terminals that receive GPS signals from satellites.
- Application: Software developers like Uber, Yelp, and Niantic write software that relies on GPS data.

Distribution companies like Garmin and Applications companies like Uber are part of the GPS stack even though they play no role in the GPS satellites themselves.



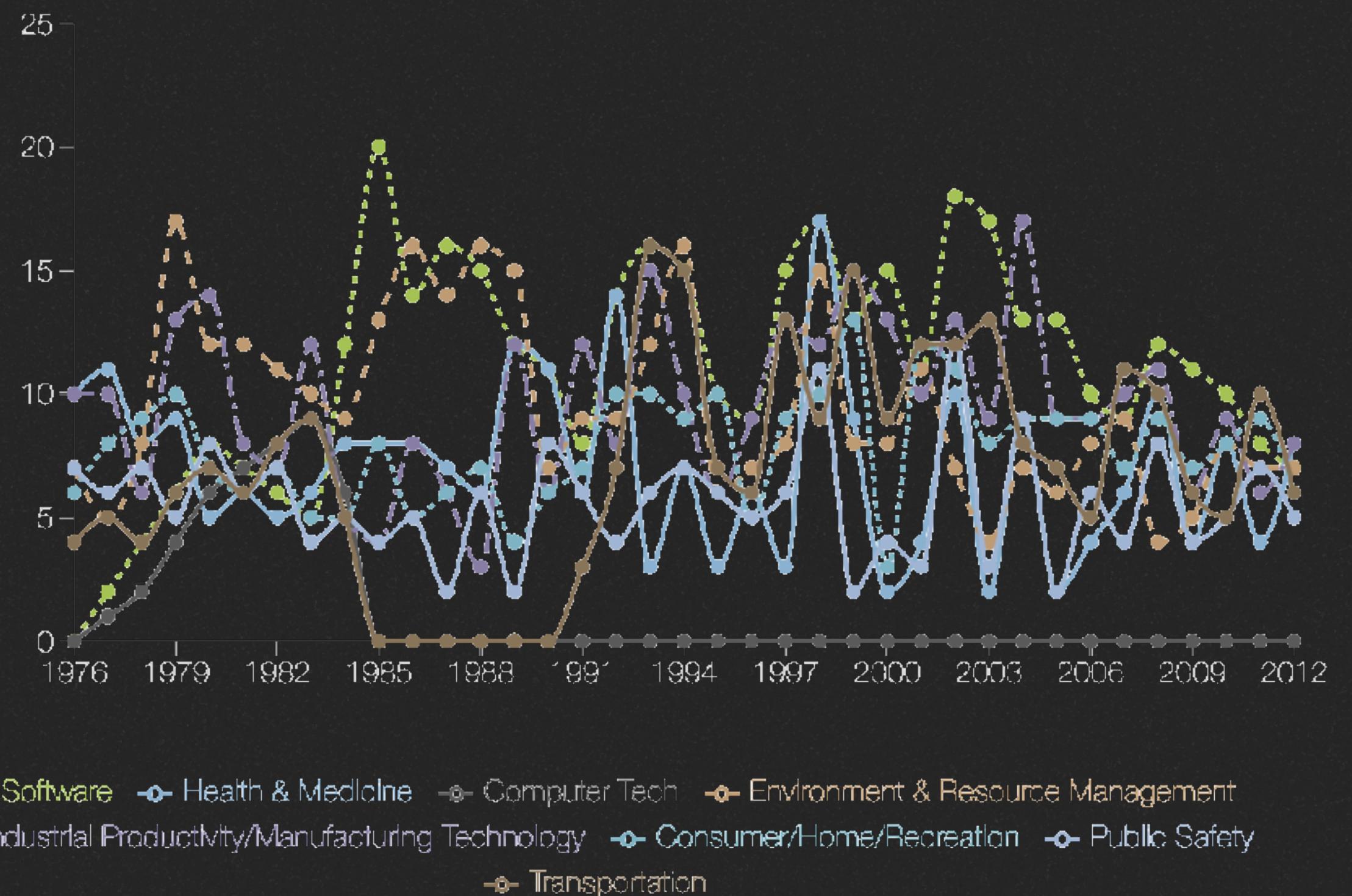
We are beginning to see founders raise capital and build around four Emerging Industries: Stations, Lunar, Logistics, and Industrials.

Most capital is still chasing solutions based on the decade-old Falcon 9 launch paradigm. With Starship, the world's first fully reusable transportation system designed to carry both crew and cargo to Earth orbit, the Moon, Mars, and beyond, expected to come online soon, we are entering a new phase that will fundamentally change the economics of space, further reducing cost-to-orbit, enabling Emerging Industries, and making existing infrastructure obsolete.

Consider the James Webb Space Telescope. Much of the cost and complexity involved with creating that instrument came down to designing and building a mirror that could fold up for launch and deploy in orbit. With Starship, you could build and launch the same mirror without folding. The entire process would have been cheaper, faster, and easier with superior results.

Source: Space Capital

## Spinoffs per year by category



Historically, the private sector has adapted space-technology, best documented in the NASA Spinoff and NASA Technology Transfer program, for commercial uses.

(Case Study) **Superconducting Magnets:** NASA funded Hyper Tech Research to design and fabricate superconducting magnesium diboride ( $MgB_2$ ) rotor coil packs for a turbo-electric aircraft propulsion system. Hyper Tech has since advanced the technology and is working with Siemens and General Electric on replacement MRI magnets. The material is also being used for power applications such as superconducting fault current limiters.

Source: Wang, Jennifer Y. "Migration of aerospace technologies to adjacent markets." Thesis, Massachusetts Institute of Technology, 2014.

The Dec. 18 Executive Order *Ensuring American Space Superiority* signed by President Donald J. Trump signals that space is a generational frontier.



President Donald Trump holds a cabinet meeting  
Source: White House

This timeline is moving quickly:

Within 60 days of the order, a National Initiative for American Space Nuclear Power will be established.

**By 2028:**

- Return Americans to the Moon through the Artemis Program
- Attract at least \$50B of additional investment in American space markets
- Develop Golden Dome: next-generation missile defense technologies

**By 2030:**

- Establish initial elements of a permanent lunar outpost
- Spur a commercial pathway to replace the International Space Station

**Longterm:**

- Establish the United States as the standards and services leader in these three areas: space traffic management, orbital debris mitigation and remediation, positioning navigation and timing
- Prepare for the journey to Mars

We identify companies across three stacks — infrastructure, distribution, and applications — of space-based technologies. We emphasize founders of known unknowns (e.g. next generation Earth Observation applications) as areas of greatest potential. We track opportunities from convergence (e.g. intersection of GEOINT, GPS, AI, and ML) and unbundling.

We target partnerships across the space ecosystem:

- Government and regulatory bodies: NASA, U.S. Space Force, DARPA, FAA, FCC
- Prime contractors and system integrators: Lockheed Martin, Boeing, Raytheon
- Launch service providers: SpaceX, Blue Origin, Rocket Lab, Virgin Galactic, Relativity Space
- Industrial and commercial end users
- Research universities: MIT, Caltech-JPL, Johns Hopkins Applied Physics Laboratory
- Federal research laboratories: Los Alamos, Sandia, Lawrence Livermore

By region, Outliers accesses different regulatory environments (regulatory arbitrage) and diverse customer bases through the United States (established), Asia-Pacific (emerging), Europe, and the Middle East.

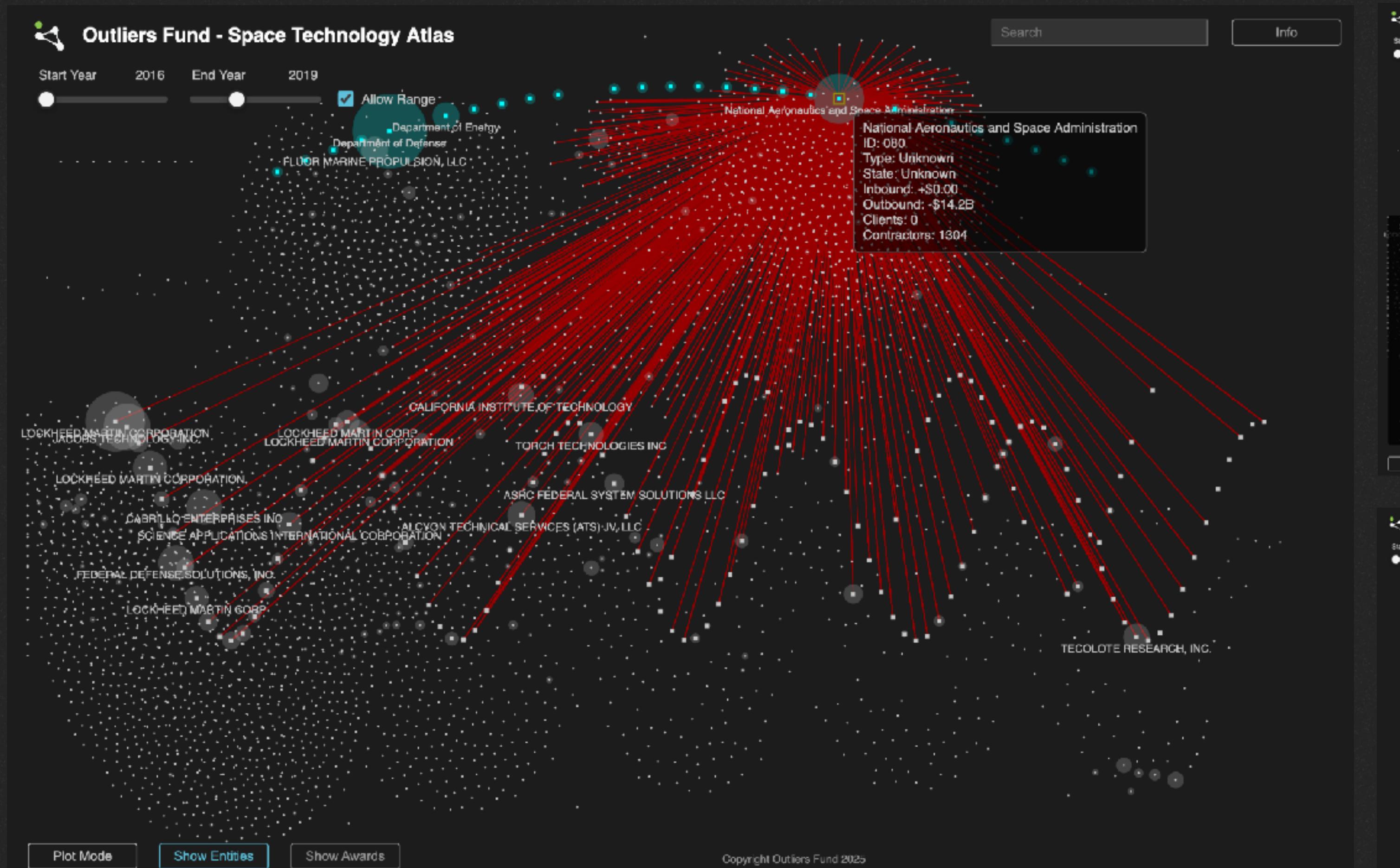
**Intelligence x Space:** Outliers Fund operates a private AI network convening top founders, family offices, and researchers through:

- SF Bay Area - based hacker houses hosting AGI-native teams in residency
- Monthly “Dinners with the Future” (15–20 curated founders, \$100M+ in aligned capital per dinner)
- Direct pipelines across AI x Computing x Space x Defense, with pre-dataroom access to stealth ventures
- Co-investment syndicates from >7 global family office communities

Outliers.fund functions as our off-market radar, surfacing deals before they touch traditional VC channels.



# Proprietary Software | Space Technology Atlas

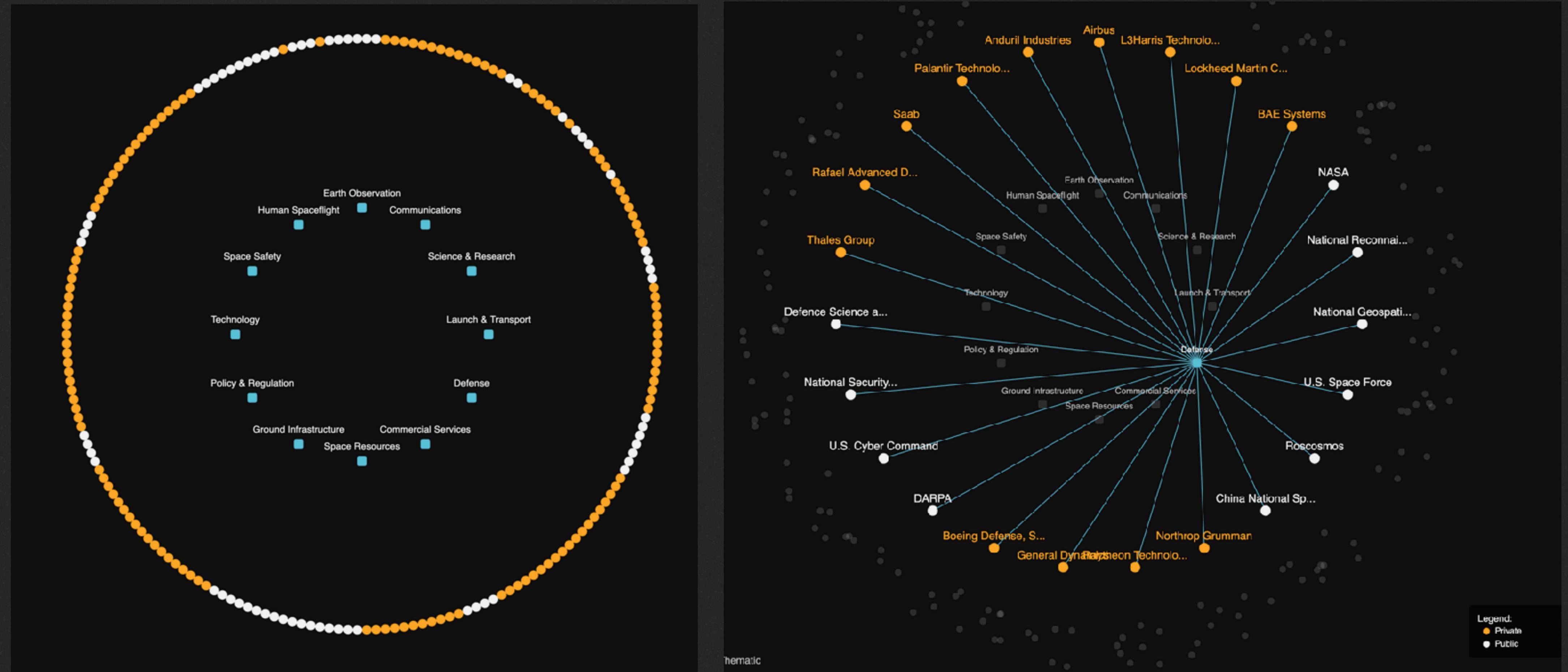


Space Atlas: <https://model.outliers.fund/sector-space/>, Research Article: <https://docs.outliers.fund/space/atlas>



We've developed a first-of-its-kind **Space Technology Atlas**, an interactive data visualization designed to reveal the intricate landscape of space technology through comprehensive analysis of U.S. federal funding data.

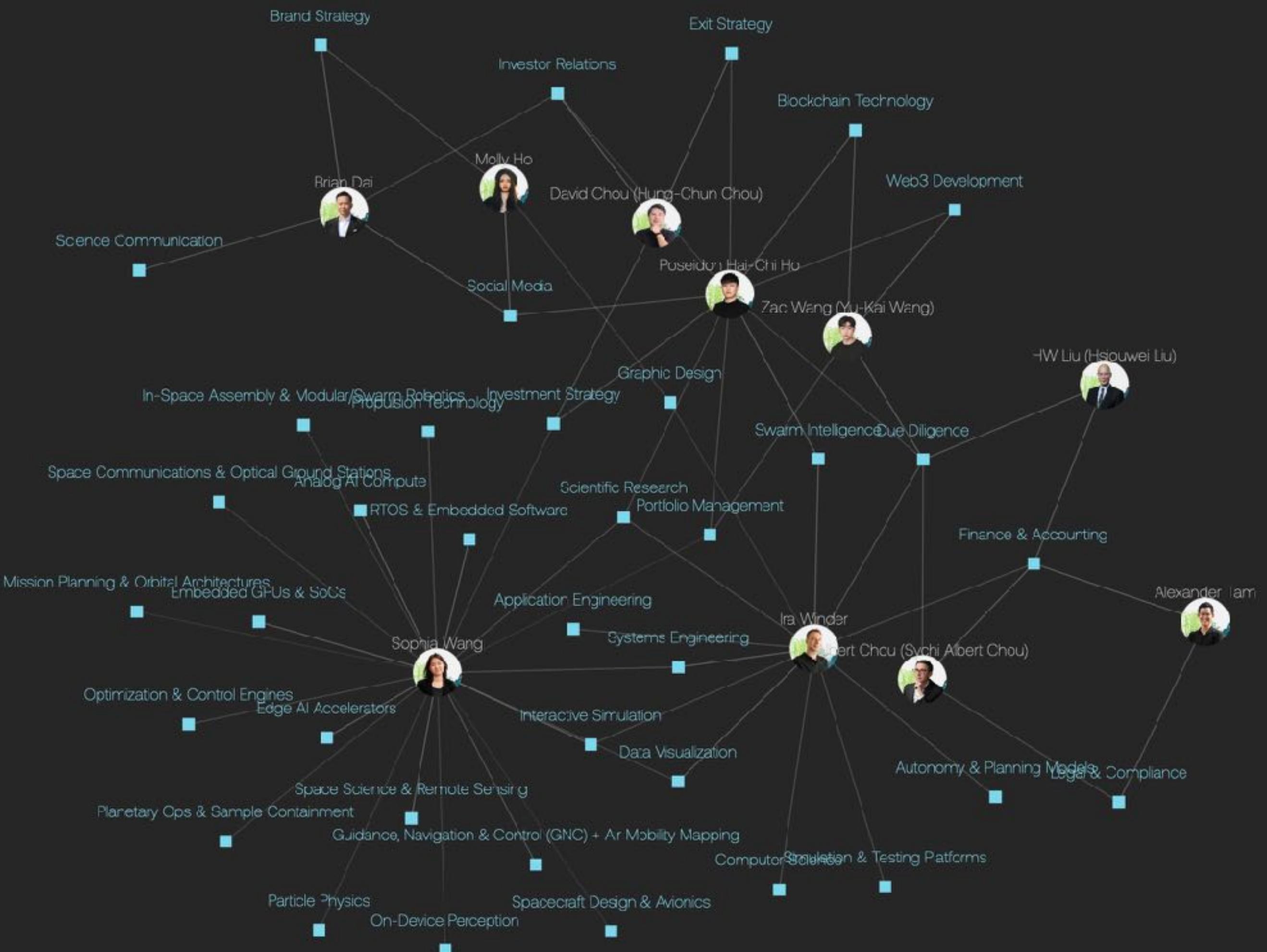
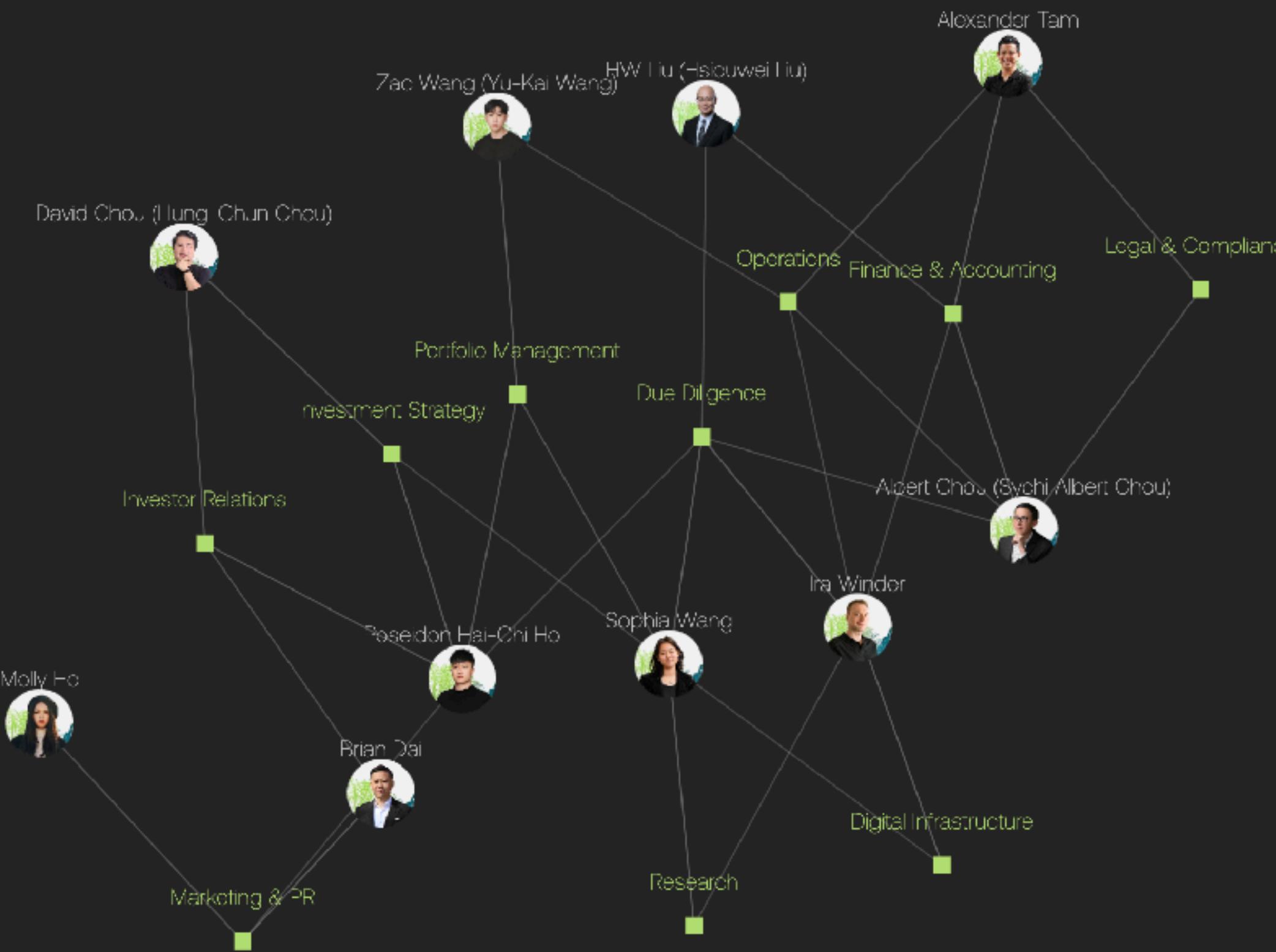
## Proprietary Software | Space Ecosystem Map



Space Ecosystem Map: [model.outliers.fund/ecosystem-map/](http://model.outliers.fund/ecosystem-map/)

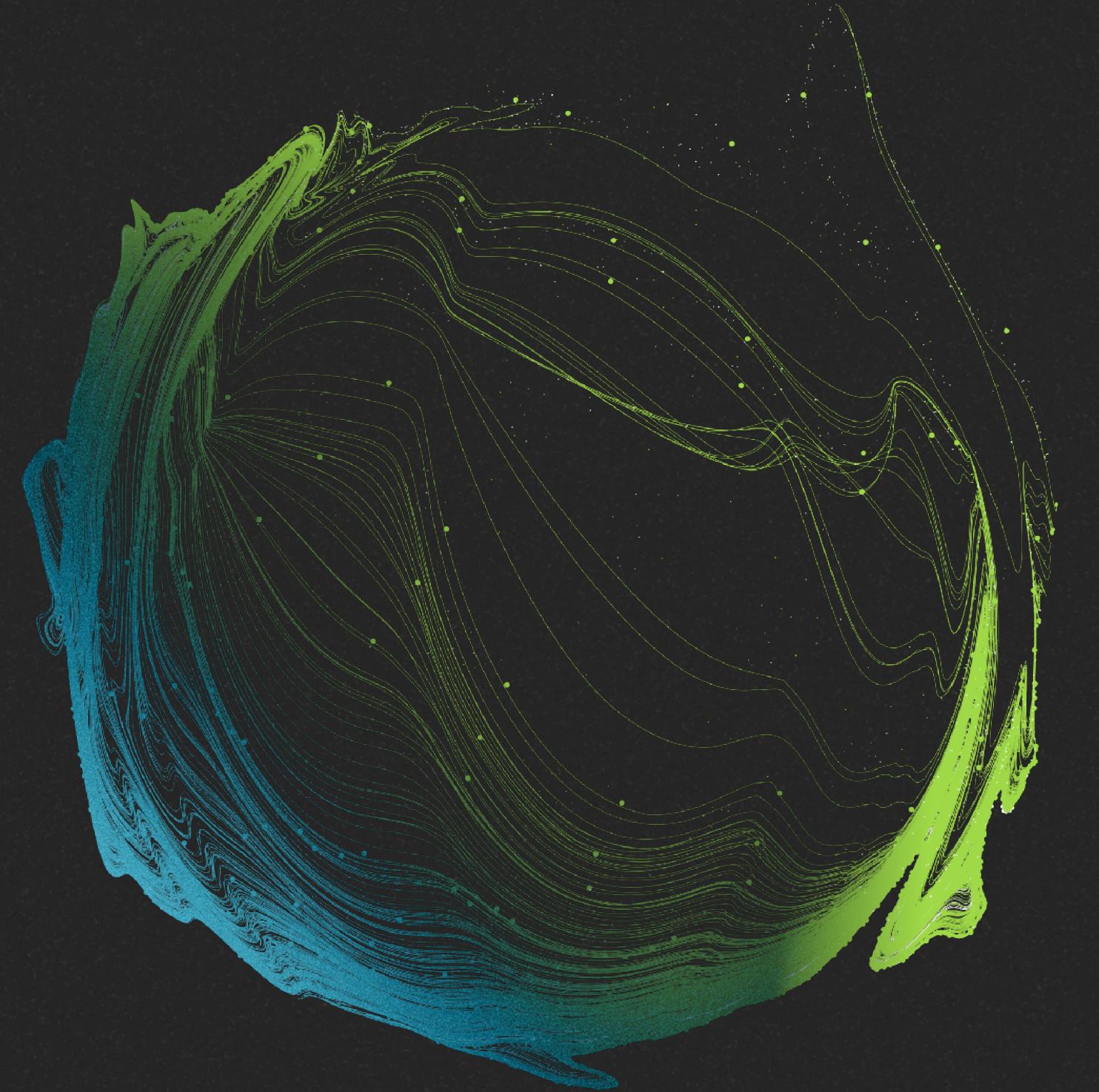
The **Space Ecosystem Map** is our comprehensive network mapping of the space economy's key players and themes, from Earth Observation to Human Spaceflight, revealing strategic insights and partnership opportunities across the public and private domain. This tool serves as our roadmap for proprietary research and investment strategy.

# Outliers Team Atlas



Team Atlas: <https://model.outliers.fund/team/>

The Outliers Team Atlas outlines our team's functions and expertise. Outliers is strategically organized to cover the multi-disciplinary complexity of space technology systems.



- **Fund History:**

Outliers Fund was founded by research scientists, venture builders and investors from MIT in 2016. Outliers Blockchain Fund I / II have returned over 16x / 11x respectively. Outliers Lab I has incubated 10 startups with \$100M+ raised collectively, three being acquired and two filing IPO.

- **Team:**

We are an experienced and complementary team of early investors of 20+ unicorns and scientists and engineers of flagship space missions.

- **Atlas:**

Space systems are complex and require expertise across a spread of domains. Our team's holistic skillset uniquely positions us to drive forward the next frontier.

# VAST



- **Market Shift**

With ISS retiring ~2030, NASA is deploying up to \$2.1B through its CLD program to seed the next generation of commercial space stations - positioning VAST as a prime beneficiary.

- **Team:**

Highly technical team with deep SpaceX pedigree - 83% of engineering talent and 26% of the full company are SpaceX alumni, with 70% of total headcount dedicated to engineering and manufacturing.

Jed McCaleb was the co-founder & CTO of Mt. Gox, Stellar, Ripple, who has a net worth of \$3B. He has self-funded Vast for over \$1B as a founder since 2021.

**Vast Space** is developing and manufacturing **next-generation commercial space stations**, starting with **Haven-1**, with the long-term vision of enabling long-term human habitation in space, including with **artificial gravity** systems.

Vast Space: <https://www.vastspace.com>

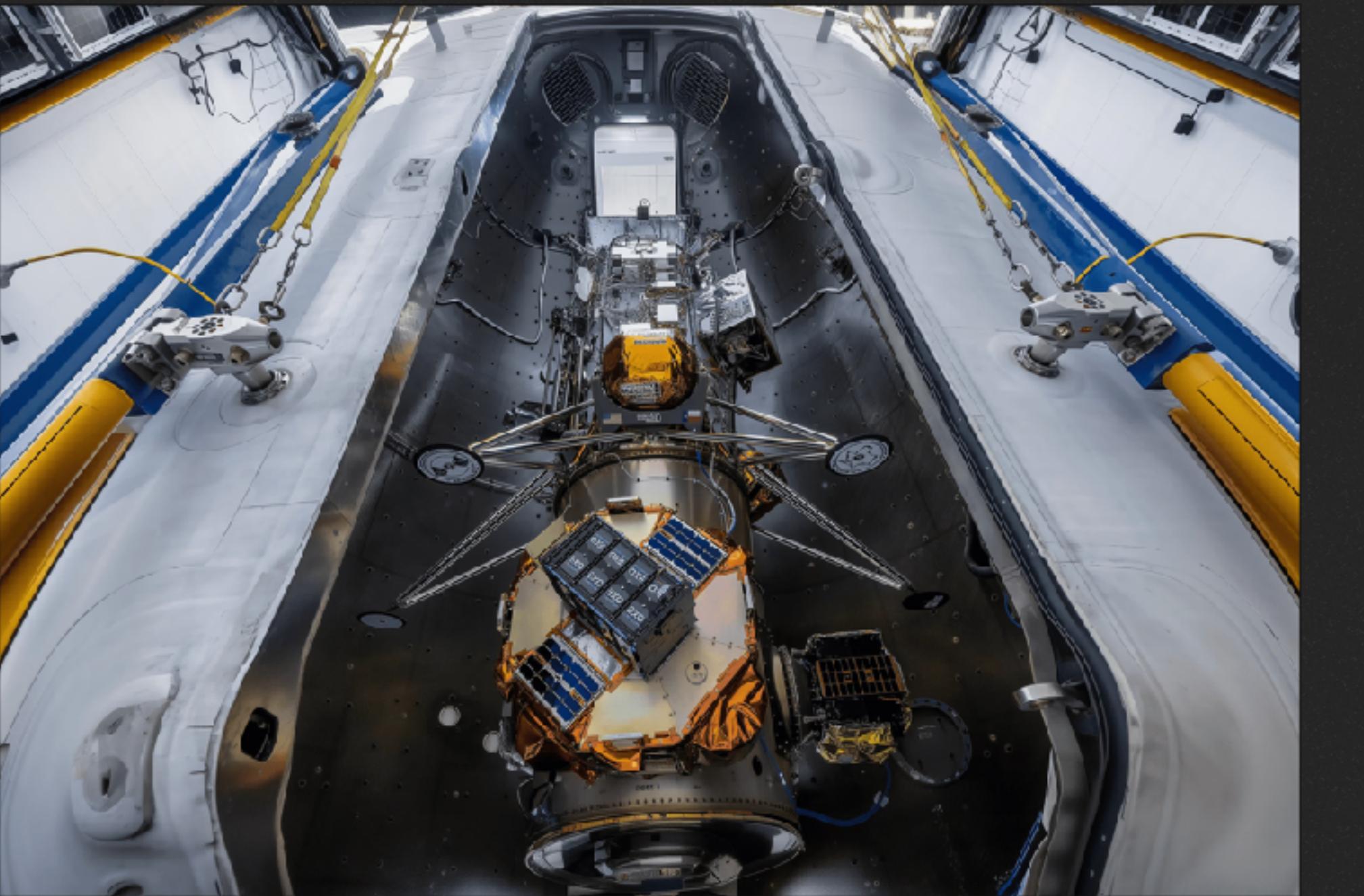


Outliers Vast Space Visit (2025)

<https://www.vastspace.com>



# ASTROFORGE



- **Market and Geopolitical Need**

The global Platinum Group Metals (PGMs) market is valued at \$24B. However, 96% of the supply chain comes from just three countries. One M-type asteroid contains ore 5,000x the PGM concentration of Earth-based sources.

AstroForge's core technology is 100x more energy efficient than current methods for material removal and processing. The team has launched the first deep-space commercial spacecraft and received the first deep-space commercial license in history from the FCC.

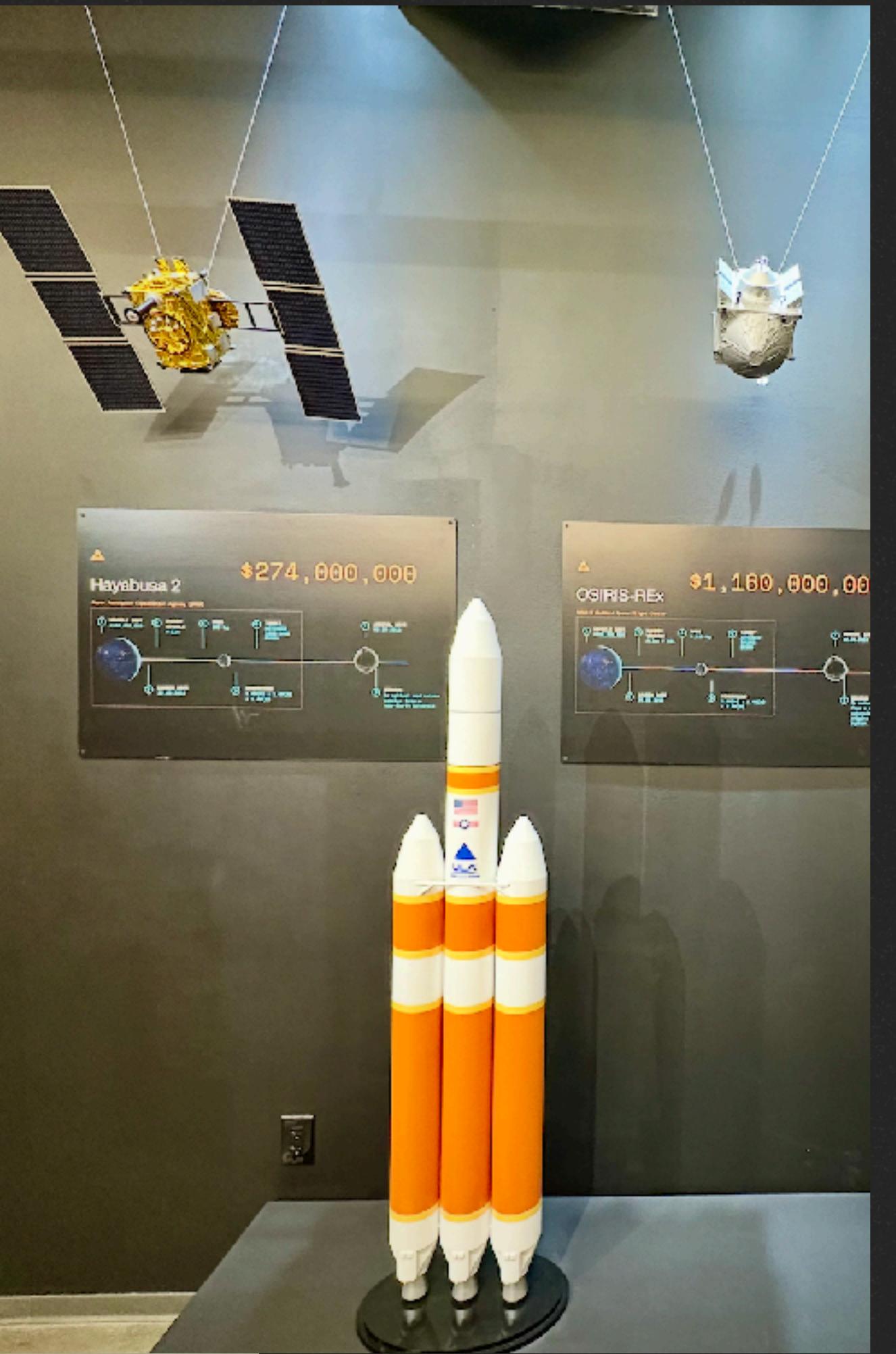
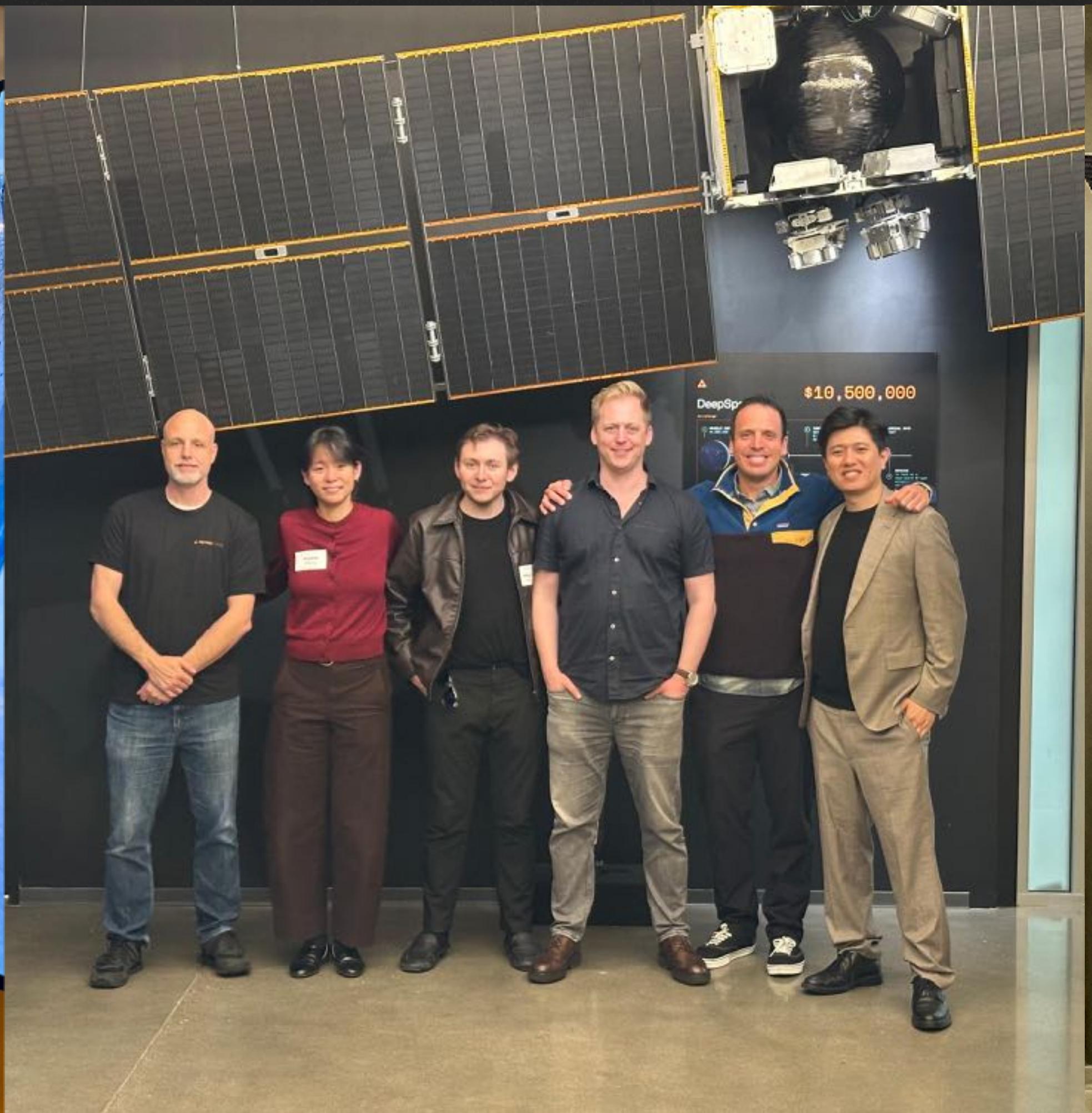
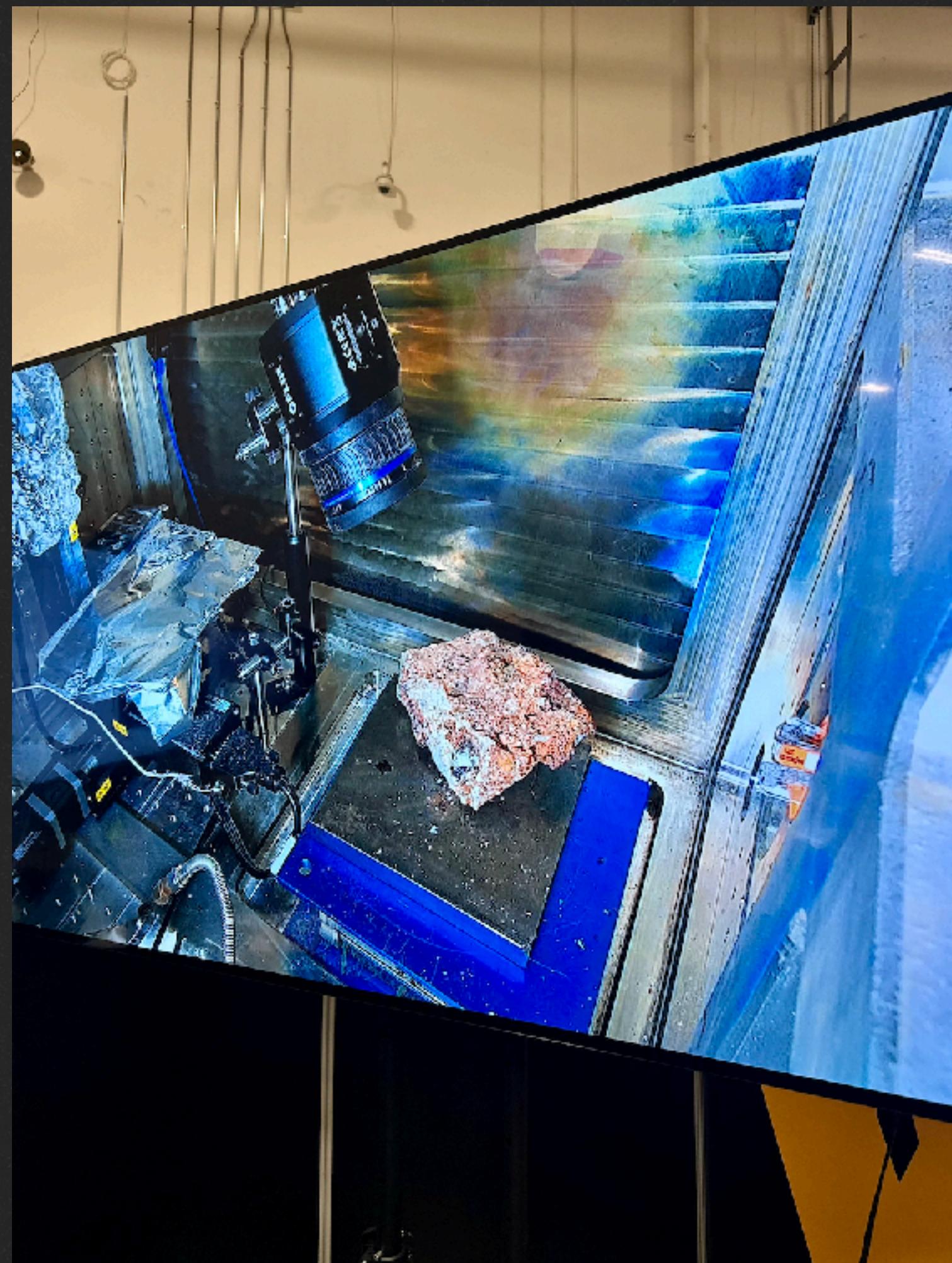
- **Strong Dual-Use Case**

Paid contracts on Earth to refine gold, spacecraft sales to the Department of Defense and NASA, and hosted payloads for deep space missions all de-risk AstroForge's ambitious goal of asteroid refinement and return.

AstroForge builds **deep-space mining technologies**, starting with the **Odin** and **DeepSpace-2** missions, which will enable the collection of **metal-rich asteroids** powering industries on Earth and beyond.

AstroForge: <https://www.astroforge.com>

## Featured Investment | AstroForge



**Outliers AstroForge Visit (2025)**

<https://www.astroforge.com>

## Fund Terms

### Legal Structure

Outliers Scientific Fund G.P. (Cayman Islands)  
Outliers Scientific Fund L.P. (Cayman Islands)

### Fund Size

\$300M USD (GP commitment capital being at least \$10M USD):  
minimum 5% of all LPs' total capital contributions

### Investment Stage

Pre-Seed to Series A round

### Fund Life

5 Years of Investment Period (2026/01/01 – 2030/12/31)  
5 Years of Exit Period (2031/01/01 – 2035/12/31)  
1+1 Years of Optional Extension Period (2036/01/01 – 2037/12/31)

### Management Fee

2% of the capital commitment every year during the Investment Period  
2% of the remaining AUM every year during the Exit/Optional Extension Period

### Carried Interest Distribution

25% deal-based payout under American Waterfall with Clawback Provision

### Minimum Check

\$1M USD for LP; \$20M USD for LPAC (Limited Partnership Advisory Committee)

### Capital Call Schedule

40% capital commitment wired in during 2026/01/01 - 2026/01/15  
30% capital commitment wired in during 2027/01/01 - 2027/01/15  
30% capital commitment wired in during 2028/01/01 - 2028/01/15